

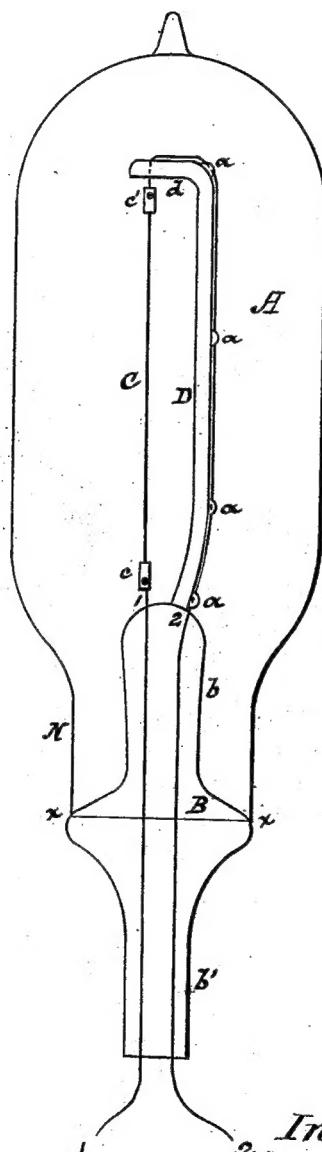
(No Model.)

T. A. EDISON.

ELECTRIC LAMP.

No. 251,546.

Patented Dec. 27, 1881.



Witnesses:

O. D. Mott  
James A. Paymer

Inventor:

T. A. Edison  
by Dyer & Wilber

Attorneys.

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY, ASSIGNOR TO THE  
EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

## ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 251,546, dated December 27, 1881.

Application filed August 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Electric Lamps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

As is well known, the lamp devised by me and used in my system consists of a strip or filament of incandescent material of high resistance bent into a loop, now commonly known as the "horseshoe carbon," hermetically sealed within a glass inclosing-globe.

It is well known that carbon expands by heating, especially with the very high heat necessary to its incandescence. This proved in the past a serious difficulty to the successful use of carbons in lamps, as the carbons then known were inflexible, and consequently after short use either the carbons were fractured or else the connection between the carbons and the conductors thereto were destroyed by the expansion. The carbons of my invention, however, in addition to possessing all the other qualities needed, possess the quality of flexibility, the carbons made by the processes before made known by me being exceedingly flexible as well as of high resistance.

It is sometimes desirable to construct a lamp in which the light-giving portion is in a straight line in order to give a line of light, instead of giving a circular or elliptical line of light.

The object of this invention is to make such a lamp, which may be done by using the high-resistance flexible carbon referred to in the manner more particularly hereinafter described and claimed.

In the drawing the one figure illustrates a lamp embodying the invention.

A is the inclosing-globe, of glass, preferably cylindrical in shape, with a dome-shaped top, the lower end being drawn into a neck, N.

A carbon-support, B, is made with its lower

end fashioned into a supporting-neck, b', and the upper part into a bulb, b. These parts are united at the line x x.

Upon the bulb b is secured a glass arm, D, rising to a little greater height above b than 50 the length designed to be given to the carbon to be used, the arm D then turning at about a right angle, as shown at d. A conductor, 2, is secured to the arm D either by being fused therein through its length, or at intervals, a a 55 a, or by being bound thereto, or in any other convenient manner. The conductor 2 has at its inner end a clamp, e', in which is secured one end of the straight flexible carbon filament, C, whose lower end is in clamp e upon 60 the inner end of conductor 1. Conductors 1 2 pass through and are sealed into b.

In the manufacture of the lamp the supporting-arm, the conductor, and the carbon are first placed in position upon b, B and A being 65 then united and A exhausted, in the manner more fully described in United States Patent No. 230,255, granted to me. This construction furnishes a lamp in which the incandescent material is in a line giving a straight 70 line of light, the arm D supporting the upper end at a proper height. The carbon, being flexible, bows slightly upon expansion under the influence of heat, avoiding the danger of fracture of the carbon or the destruction of its 75 union with the conductors, which has beset former attempts in this line.

What I claim is—

The combination, with the carbon-supporting bulb, of a glass arm rising above the bulb 80 and supporting one end of a straight carbon and the conductor leading thereto, substantially as set forth.

This specification signed and witnessed this 10th day of August, 1880.

THOS. A. EDISON.

Witnesses:

WM. CARMAN,  
OTTO A. MOSES.